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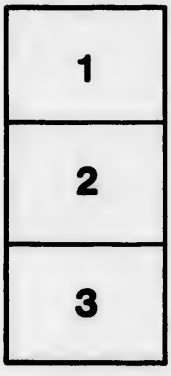

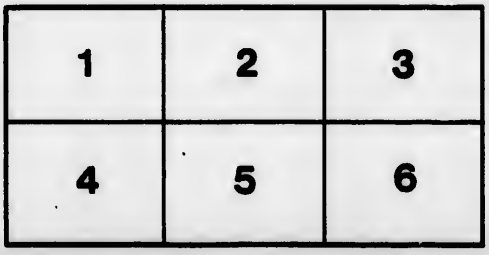

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A SIMPLE AND INEXPENSIVE METHOD OF OBTAINING AND PASTEURIZING CREAM FOR THE PREPARATION OF INFANT FOOD.

BY

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The problem of providing a suitable food for infants who have to be fed artificially is one that the family physician has constantly before him; and although he may have a partial respite during the winter months from his worries and anxieties in this respect, returning spring brings with it the same difficulties each year.

That cows milk modified in such a manner as to render its composition similar to that of mother's milk is the best artificial food, seems to be now generally admitted by the profession, and the plan carried out by the Walker Gordon laboratories is perhaps the best one yet devised. Nevertheless, for many reasons, the application of this method is as yet only possible in large cities and even then among the well-to-do, so that for country people and the middle and poorer classes in cities one must rely upon home modification.

It has always seemed to me that there are two essentials in the use of cows' milk for infants food; namely, cream of fairly constant strength, and pasteurization With regard to the latter, I am quite aware that under certain circumstances it can be dispensed with, but these are not the conditions which are met with among the class to which I have referred. In the cities where milk is delivered once a day and where this milk with few exceptions has been drawn from the cows the night before the morning delivery, it is impossible to keep it free from contamination for twenty-four hours without pasteurizing it, except, perhaps, during the coldest months of the year. In the country, on the other hand, although fresh milk can be obtained twice a day, it takes time for the cream to rise and as comparatively few families can afford the luxury of an ice-house, during the hot months there is the same, though not so great, danger of those fermentative changes taking place in the milk which render it indigestible and unsafe.

The necessity for using cream as the basis of the food I will not refer to as it is not my intention to discuss that part of the subject.

Some years ago, having to do with a considerable number of infants requiring artificial food both in private and hospital practice, I devised

the following plan and have found it simple and easy to carry out. I do not claim anything especially original in my methods but merely that they can be easily put into practice by any woman who is willing to devote three-quarters of an hour each day to the preparation of food for her baby and who is able to incur the small expense ($1.00) entailed in procuring the apparatus.

To obtain a cream of fairly definite composition.

In the city where milk is delivered in quart bottles the daily supply should be obtained in this way, and the milkmen make no extra charge for delivering it in bottles. Milk delivered in the city in the morning, except in a few instances in which the dairies are only a few miles from town, is drawn from the cows the night before and put either into quart bottles or into large cans. When the new milk is placed in bottles each bottle will contain about the same amount of cream, some of which will have risen during the night preceding delivery. Where cans are used some of the cream will have risen during transit to the city, and the milkman, in order to ensure that his customers all get their fair proportion of cream, gives his cans a shaking up before measuring out the milk. This, however, is only partially successful in mixing the cream and milk and the first milk poured from each can is much richer in cream than that at the bottom. The bottles, when received, are to be set in a cool place for six or eight hours to allow the cream to rise. In the country, where each family has their own cows, the new milk should be put into quart bottles, "jem jars" will answer the purpose perfectly, and set aside for the cream to rise.

In separating the cream from the milk it is necessary, in order to ensure uniformity, to draw the milk from the bottom of the bottle and allow the cream to slowly settle down without being disturbed as the milk is taken away. This can only be accomplished by means of a siphon and, owing to the impossibility of obtaining a simple and cheap one ready made, I am in the habit of making a siphon myself for each of my patients requiring it. All that is necessary is to bend a piece of glass tubing of the proper size to the shape of a V, and any physician can do this by using the following simple directions:—

To make the Siphon, get a piece of glass tubing 21 inches in length and a quarter of an inch in calibre. This can be obtained from any wholesale druggist and can be ordered cut into lengths of 21 inches, which makes it easy of shipment. German glass I have found less liable to crack and easier to work than American. Should it be necessary to cut the glass, make a small scratch in it with a three-cornered file where the break is wanted, then catch it between the fingers and opposing thumbs of both hands having the thumb nails touching on the side of

the glass just opposite to the scratch, then, on attempting to bend it, it will break off smoothly across, and the sharp edges can be rubbed down with a file. To bend the glass to the V shape, hold it in the flame of an ordinary gas jet, or coal oil lamp with the chimney removed, for a few minutes until it softens sufficiently to allow it to be bent to the required angle. The tube should be warmed gradually at first and then put right into the flame and allowed to become smoked, twirling it slowly in the flame so that it becomes equally heated all around. It is well also to heat in this manner about four inches of the tube in order to get a curve rather than an angle at the bend, as the latter is harder to keep clean. A Bunsen burner or spirit lamp gives too hot a flame and melts the glass. It is convenient to make one arm of the siphon an inch or two longer than the other.

In using the siphon hold it with the angle down, fill it with water, and close the long arm with the tip of the finger. Then, keeping the finger applied to the long end, turn the siphon with the angle up and introduce the short arm into the bottle of milk, letting it rest upon the bottom. On removing the finger, the milk will flow through the tube and continue to do so until the bottle is empty. If, however, the layer of cream is watched, the siphon can be lifted out of the bottle just before the cream reaches it, and thus there is left in the bottle all the cream and a small portion of milk, the latter depending upon the expertness of the person using the siphon.

To pasteurize the cream.

A clear glass bottle with not too large a neck, a chemical thermometer registering up to 212° F. fitted in a perforated cork, which loosely fits the neck of the bottle, in such a manner that the bulb of the thermometer comes within half an inch of the bottom of the bottle, and some absorbent cotton, are all that is required in the way of apparatus. The chemical thermometer can be obtained from any wholesale druggist for 85 cents. The cork can be perforated with a rat-tail file or by burning out the hole with a red hot skewer. The cream is put into the bottle and the cork containing the thermometer inserted; the bottle is then placed in a pot containing a couple of inches of warm water and allowed to heat on the stove. The thermometer is watched until it reaches 160° F., taking care that it does not go above 165° and the pot is then set on the back of the stove where it will cool off very slowly and allowed to remain there for twenty minutes. At the end of this time the bottle is removed from the pot and the cork replaced with a rolled up plug of absorbent cotton. If the cotton should become wet it must be changed for a dry plug. Cream prepared in this way will keep sweet for twenty-four hours at least without needing to

be kept on ice, and all that is necessary in removing a portion from the bottle is to be sure that the cotton plug does not become moist, or, if it should, to replace it with a dry piece at once.

It is not my intention here to say anything about the formulæ for preparing food from cream obtained in this way. Water, or barley water, and sugar can be added in various proportions according to the age of the child. If desired, too, a certain amount of milk can be left in the bottle with the cream. My own practice has been to call at the patient's house and see the bottle containing the milk after the cream has risen and then show the person who undertakes the pasteurization how much is to be left in the bottle when the siphon is used. If this should not agree with the child, the proportion of cream to milk can be altered by allowing less or more to drain away through the siphon, and in this way, although one cannot always estimate exactly the proportionate amount of proteids and fats that the child is getting, one can, by changing the proportions, get a food that agrees with the child.

It will be readily understood that this method of siphoning off the milk can be much more easily comprehended by a practical demonstration, and that, therefore, it is much better to have a siphon and milk bottle in one's office to show how it is done than to describe it, or, better still, to go to the patient's house and perform all the steps for them the first time. The only difficulty I have met with so far has been in having the siphon kept clean and sterile. It can be washed by allowing a stream of cold water to run through it after each time it is used and also by using one of the wire tube brushes that are sold at every shop where feeding bottles are to be had. The wire of the brush requires to be lengthened by adding eighteen inches of brass or copper wire to it in order that it may be drawn through the tube. The siphon can also be boiled occasionally.